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7 / THIS PROGRAM SOURCE FILE IS SUPPLIED IN CONFIDENCE TO THE
8 / CUSTOMER; THE CONTENTS OR DETAILS OF ITS OPERATION MAY ONLY
9 / BE DISCLOSED TO PERSONS EMPLOYED BY THE CUSTOMER WHO
10 / REQUIRE A KNOWLEDGE OF THE SOFTWARE CODING TO CARRY OUT
11 / THEIR JOB. DISCLOSURE TO ANY OTHER PERSON MUST HAVE PRIOR
12 / AUTHORIZATION FROM THE DIRECTORS OF REDAC SOFTWARE LIMITED
13 /
14 /1 SUITE : P.C.B. LAYOUT
15 /2 PROGRAM TITLE : REDAL23 MARK2
16 /3 ROUTINE TITLE :
17 /
18 /4 AUTHOR :
19 /5 DATE :
20 /
21 /6 PURPOSE :
22 /
23 /
24 /7 CALLING SEQUENCE AND DESCRIPTION OF ARGUMENTS :
25 /
26 /8 I/O DEVICES AND FUNCTIONS :
27 /
28 /9 REGISTERS USED :
29 /
30 /10 EXTERNAL COMMON AREAS :
31 /
32 /11 INTERNAL COMMON AREAS :
33 /
34 /12 EXTERNAL GLOBALS :
35 /
36 /13 INTERNAL GLOBALS :
37 /
38 /14 CONDITIONAL ASSEMBLY PARAMETERS :
39 /
40 /15 METHOD :
41 /
42 /16 AMENDMENTS :
43 /
44 /SUBR. DFDEL DELETES AND ITEM FROM DF. AND, IF DS. ITEM, CLEARS
45 / POINTER TO DF.. CALL(NAME, FLAG). IF NAME IS NEGATIVE THEN IT
46 / REFERS TO NON-DS ITEM. IF POSITIVE IT MUST BE REL. PTER. (STORED
47 / TO FIRST WORD OF ITEM IN DS.
48 / .GLOBL DFINIT, DFDEL, DFAD, DFREP, .DA, WINDOW, DFADDR, DFKEEP
49 / EDITED FOR REDAL 14, SEPT 72
50 00000 R 000000 A SIZE .CBD SIZE 1
51 00001 R 000000 A COMPAD .CBD COMPS 1
52 00002 R 000000 A CONNAD .CBD CONNX 1

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53 00003 R 000000 A DFKEEP 0 / DUMMY GLOBAL TO ENABLE ROUTINE TO BE INCLUDED
54                               / IN .LIBR5 ( THE USER LIBRARY FILE)
55 00004 R 000000 A GETARG 0
56 00005 R 200004 R LAC GETARG
57 00006 R 723775 A AAC -3
58 00007 R 040013 R DAC .+4
59 00010 R 220013 R LAC* .+3
60 00011 R 040013 R DAC .+2 / SET REQUD. ADDR. FOR .DA
61 00012 R 741000 A SKP
62 00013 R 740000 A NOP
63 00014 R 121075 E JMS* .DA
64 00015 R 600021 R JMP .+1+3
65 00016 R 000000 A PAR1 .DSA 0 /NAME
66 00017 R 000000 A PAR2 .DSA 0 /FLAG
67 00020 R 000000 A PAR3 .DSA 0 /BUF[START] ADDR.
68 00021 R 200000 R LAC SIZE
69 00022 R 723006 A AAC 6
70 00023 R 041066 R DAC DFSIZ# /ADDRESS OF D.F. SIZE
71 00024 R 221073 E LAC* DFADDR
72 00025 R 040722 R DAC ADFAD
73 00026 R 220017 R LAC* PAR2
74 00027 R 040720 R DAC TFLAG
75 00030 R 620004 R JMP* GETARG
76 00031 R 000000 A DFDEL 0
77 00032 R 740000 A NOP
78 00033 R 100004 R JMS GETARG
79 00034 R 201076 R LAC (NOP
80 00035 R 040032 R DAC DFDEL+1
81 00036 R 160017 R DZM* PAR2 /CLEAR FLAG SHOWING ITEM DELETED
82 00037 R 220016 R LAC* PAR1 /LOAD NAME
83 00040 R 100477 R JMS GETIT /FIND ITEM IN DF.
84 00041 R 600067 R JMP ABS /NOT FOUND
85 00042 R 200731 R LAC NAME /STORED BY GETIT
86 00043 R 741100 A SPA /DF -DS LINKAGE
87 00044 R 600056 R JMP NAMD
88 00045 R 220730 R LAC* ADDR /REL PTER TO DS
89 00046 R 040732 R DAC TEMPS
90 00047 R 100567 R JMS FINDIT
91 00050 R 540730 R SAD ADDR /DF - DS LINKAGE WRONG
92 00051 R 600054 R JMP LOK
93 00052 R 460017 R ISZ* PAR2
94 00053 R 600067 R JMP ABS
95 00054 R 750000 A LOK CLA /CLEAR DS PTER. TO DF.
96 00055 R 100615 R JMS INLINK
97 00056 R 724000 A NAMD PXA
98 00057 R 060730 R DAC* ADDR /WRITE DJI ADDR.
99 00060 R 200730 R LAC ADDR
100 00061 R 723777 A AAC -1
101 00062 R 040730 R DAC ADDR /TO START OF ITEM
102 00063 R 501077 R AND (17777
103 00064 R 341100 R TAD (620001
104 00065 R 060730 R DAC* ADDR /WRITE DJI

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105 00066 R 620031 R JMP* DFDEL /EXIT ITEM DELETED
106 00067 R 460017 R ABS ISZ* PAR2 /NOT FOUND
107 00070 R 620031 R JMP* DFDEL /EXIT FLAG=1 IF ABSENT,FLAG=2 IF WRONG LINKAGE
108 /
109 /
110 /
111 /
112 00071 R 000000 A DFINIT 0 /INITIALISES DISPLAY FILE
113 00072 R 221073 E LAC* DFADDR
114 00073 R 040722 R DAC ADFAD
115 00074 R 201101 R LAC (2
116 00075 R 060722 R DAC* ADFAD /SETS NO. OF WORDS TO 2
117 00076 R 200722 R LAC ADFAD
118 00077 R 723002 A AAC 2
119 00100 R 040732 R DAC TEMPS /ADDR. OF RETURN JUMP
120 00101 R 723777 A AAC -1 /ADDR. FOR RETURN JUMP
121 00102 R 501077 R AND (17777
122 00103 R 341102 R TAD (620000
123 00104 R 060732 R DAC* TEMPS /RETURN JUMP STORED
124 00105 R 620071 R JMP* DFINIT /EXIT
125 /
126 /
127 /
128 /
129 /SUB. DFREP REPLACES ITEM 'NAME0 IN THE DISPLAY FILE BY THE
130 /ITEM IN SUB. PIC. FORM IN THE BUFFER SPECIFIED BY BUF.
131 /THE OCCURANCE OF ANY ERROR WIL SET FLAG TO 1
132 /CALL DFREP(NAME,FLAG,BUF(1))
133 DFREP 0
134 00107 R 740000 A NOP
135 00110 R 100004 R JMS GETARG /GET ARGS OF CALL
136 00111 R 160017 R DZM* PAR2 /TO SHOW ITEM REPLACED
137 00112 R 220016 R LAC* PAR1
138 00113 R 100477 R JMS GETIT /FIND NAMED ITEM
139 00114 R 600160 R JMP EROR /ITEM NOT FOUND
140 00115 R 724000 A PXA /START ADDR. OF NEXT ITEM
141 00116 R 722000 A PAL /SET L FOR WRITING DNOPS
142 00117 R 740031 A TCA
143 00120 R 340730 R TAD ADDR
144 00121 R 723001 A AAC 1
145 00122 R 040740 R DAC NWDS /MINUS GAP SIZE FOR DISPLAY CODE INSERTION
146 00123 R 200020 R LAC PAR3 /START ADDR. OF BUF
147 00124 R 723002 A AAC 2
148 00125 R 040725 R DAC AD1 /START ADDR. FOR MOVING DISPLAY CODE
149 00126 R 220020 R LAC* PAR3 /NO. OF WORDS
150 00127 R 723776 A AAC -2
151 00130 R 040737 R DAC NW /NO. OF WORDS OF DISPLAY CODE TO BE COPIED
152 00131 R 340740 R TAD NWDS
153 00132 R 740300 A SZA!SMA
154 00133 R 600151 R JMP NOROM /NOT ENUF ROOM
155 00134 R 200730 R LAC ADDR
156 00135 R 723001 A AAC 1

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157 00136 R 040726 R DAC AD2 /START ADDR. OF INSERTION
158 00137 R 100416 R JMS MOVE /COPY IN DISPLAY CODE
159 00140 R 200730 R LAC ADDR
160 00141 R 340737 R TAD NW
161 00142 R 721000 A PAX /SET X TO LAST POSITION USED
162 00143 R 725001 A IDNOP AXS 1 /ANY SPARE GAP BEING FILLED WITH DNOPS
163 00144 R 741000 A SKP
164 00145 R 620106 R JMP* DFREP /EXIT
165 00146 R 201103 R LAC (200000
166 00147 R 070724 R DAC* ZERO,X /WRITE DNOPS IN SPARE SPACE
167 00150 R 600143 R JMP IDNOP
168 00151 R 201104 R NOROM LAC (SKP
169 00152 R 040032 R DAC DFDEL+1 /WRITE IN SKP ROUND GETARG CALL
170 00153 R 100031 R JMS DFDEL /DELETE ITEM
171 00154 R 201104 R LAC (SKP
172 00155 R 040164 R DAC DFAD+1 /WRITE IN SKP ROUND GETARG CALL
173 00156 R 100163 R JMS DFAD /ADD NEW ITEM TO END OF DISPLAY FILE
174 00157 R 620106 R JMP* DFREP
175 00160 R 201105 R ERROR LAC (3 /SET FLAG TO SHOW ITEM ABSENT
176 00161 R 060017 R DAC* PAR2
177 00162 R 620106 R JMP* DFREP /ERROR EXIT
178 /
179 /
180 /
181 /
182 /SUB. DFAD ADDS ITEM 'NAME@ TO THE DF. THE ITEM IS SPECIFIED
183 /BY THE CONTENTS OF THE BUFFER BUF SET UP IN SUB. PIC. FORM.
184 /IF THERE IS NOT ENOUGH ROOM FLAG IS SET TO 1.
185 /CALL DFAD(NAME, FLAG, BUF(1)).
186 00163 R 000000 A DFAD 0
187 00164 R 740000 A NOP
188 00165 R 100004 R JMS GETARG /GET ARGS. OF CALL
189 00166 R 201076 R LAC (NOP
190 00167 R 040164 R DAC DFAD+1
191 00170 R 160017 R DZM* PAR2 /TO SHOW ITEM ADDED
192 00171 R 140743 R DZM CFLAG /SET TO 1 IF DF. COLLAPSED
193 00172 R 220016 R LAC* PAR1
194 00173 R 740100 A SMA /NAMED ITEM
195 00174 R 600201 R JMP TRYIT
196 00175 R 100477 R JMS GETIT
197 00176 R 600201 R JMP TRYIT /NO ITEM PRESENT WITH SAME NAME
198 00177 R 460017 R ISZ* PAR2
199 00200 R 600407 R JMP FULUP
200 00201 R 220020 R TRYIT LAC* PAR3
201 00202 R 723776 A AAC -2
202 00203 R 040737 R DAC NW /NO. OF WORDS TO BE TRANSFERED TO DF.
203 00204 R 221066 R LAC* DFSIZ /DF. LENGTH
204 00205 R 740031 A TCA
205 00206 R 723004 A AAC 4
206 00207 R 360722 R TAD* ADFAD
207 00210 R 340737 R TAD NW
208 00211 R 740100 A SMA

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209 00212 R 600255 R JMP COLL
210 00213 R 200722 R LAC ADFAD
211 00214 R 360722 R TAD* ADFAD
212 00215 R 061106 R DAC* (12 /START ADDR. FOR INSERTION
213 00216 R 040730 R DAC ADDR
214 00217 R 220016 R LAC* PAR1
215 00220 R 741100 A SPA /LINK TO D.S. REQUIRED
216 00221 R 600226 R JMP NODS
217 00222 R 040732 R DAC TEMPS
218 00223 R 200730 R LAC ADDR
219 00224 R 740030 A IAC
220 00225 R 100615 R JMS INLINK
221 00226 R 220016 R NODS LAC* PAR1
222 00227 R 060012 A DAC* 12 /WRITE NAME+1 IN DF.
223 00230 R 221106 R LAC* (12
224 00231 R 723001 A AAC 1
225 00232 R 040726 R DAC AD2 /NEW START ADDR. FOR DISPLAY CODE BLOCK MOVE
226 00233 R 200020 R LAC PAR3
227 00234 R 723002 A AAC 2
228 00235 R 040725 R DAC AD1 /START ADDR. OF DISPLAY CODE TO BE MOVED
229 00236 R 100416 R JMS MOVE
230 00237 R 220722 R LAC* ADFAD
231 00240 R 340737 R TAD NW
232 00241 R 723002 A AAC 2
233 00242 R 060722 R DAC* ADFAD /UPDATED TOTAL NO. OF WORDS IN DF.
234 00243 R 340722 R TAD ADFAD
235 00244 R 040732 R DAC TEMPS
236 00245 R 200722 R LAC ADFAD
237 00246 R 501077 R AND (17777
238 00247 R 341100 R TAD (620001
239 00250 R 060732 R DAC* TEMPS /WRITE IN DJI AT END OF DF.
240 00251 R 201107 R LAC (235176
241 00252 R 340720 R TAD TFLAG
242 00253 R 060730 R DAC* ADDR /WRITE IN SKIP
243 00254 R 620163 R JMP* DFAD /EXIT
244 00255 R 200743 R COLL LAC CFLAG
245 00256 R 740200 A SZA /COLLAPSE NOT TRIED
246 00257 R 600407 R JMP FULUP /NO ROOM IN DF.
247 00260 R 440743 R ISZ CFLAG /TO SHOW COLLAPSED DF.
248 /DF COLLAPSE SECTION
249 00261 R 140742 R DZM FLAG2
250 00262 R 140735 R DZM SHIFT
251 00263 R 703044 A 703044 /STOP DISPLAY
252 00264 R 200722 R LAC ADFAD /START ADDR. OF DF.
253 00265 R 723002 A AAC 2
254 00266 R 721000 A PAX /START OF SEARCH
255 00267 R 723776 A AAC -2
256 00270 R 360722 R TAD* ADFAD
257 00271 R 722000 A PAL /ADDR. OF END OF DF (BEFORE ANY COLLAPSE)
258 00272 R 200720 R LAC TFLAG
259 00273 R 040721 R DAC TFLAG1 /SAVE TFLAG
260 00274 R 230724 R LOOPA LAC* ZERO,X /LOAD DF WORD

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261	00275	R	541107	R	SAD (235176
262	00276	R	600302	R	JMP .+4
263	00277	R	541110	R	SAD (235177
264	00300	R	741000	A	SKP
265	00301	R	600315	R	JMP NOTSKP /SKIP NOT FOUND WITH REQUD. NAME (177)
266	00302	R	341111	R	TAD (-235176
267	00303	R	040720	R	DAC TFLAG
268	00304	R	230723	R	LAC* ONE,X /LOAD NAME
269	00305	R	741100	A	SPA /PTER. TO DS. FOUND
270	00306	R	600313	R	JMP STEP
271	00307	R	040732	R	DAC TEMPS /ABS. PTER. TO DS.
272	00310	R	200735	R	LAC SHIFT
273	00311	R	740200	A	SZA
274	00312	R	100711	R	JMS UPDATE
275	00313	R	737001	A	STEP AXR 1 /STEP OVER NAME
276	00314	R	600320	R	JMP GOON
277	00315	R	501112	R	NOTSKP AND (760000
278	00316	R	541102	R	SAD (620000
279	00317	R	600323	R	JMP DJIF
280	00320	R	725001	A	GOON AXS 1 /INCR. X. SKIP IF END OF DF.
281	00321	R	600274	R	JMP LOOPA
282	00322	R	440742	R	ISZ FLAG2 /END OF DF. FOUND
283	00323	R	724000	A	DJIF PXA
284	00324	R	040727	R	DAC AD3 /ABS. START ADDR. OF GAP
285	00325	R	200735	R	LAC SHIFT
286	00326	R	741200	A	SNA /NOT FIRST GAP FOUND
287	00327	R	600342	R	JMP NOMUV /NO BLOCK TO MOVE
288	00330	R	200725	R	LAC AD1
289	00331	R	740031	A	TCA
290	00332	R	340727	R	TAD AD3
291	00333	R	723002	A	AAC 2
292	00334	R	040737	R	DAC NW /NUMBER OF WORDS TO BE MOVED
293	00335	R	100416	R	JMS MOVE
294	00336	R	200735	R	LAC SHIFT
295	00337	R	340727	R	TAD AD3
296	00340	R	040727	R	DAC AD3 /UPDATE PTER. TO START OF GAP
297	00341	R	721000	A	PAX /UPDATED X (SCAN PTER.)
298	00342	R	200742	R	NOMUV LAC FLAG2
299	00343	R	740200	A	SZA /NOT END OF DF.
300	00344	R	600376	R	JMP EODF
301	00345	R	230724	R	SKNDJ LAC* ZERO,X /GET NEXT DF. WORD
302	00346	R	501112	R	AND (760000
303	00347	R	341113	R	TAD (-620000
304	00350	R	740200	A	SZA /DJI FOUND
305	00351	R	600363	R	JMP EOGAP /END OF GAP FOUND
306	00352	R	230723	R	LAC* ONE,X /GET ADDR. FOR DJI
307	00353	R	721000	A	PAX /UPDATE X TO GO TO IT
308	00354	R	725001	A	AXS 1
309	00355	R	600361	R	JMP .+4 /NOT END OF DFILE
310	00356	R	440742	R	ISZ FLAG2 /END OF D.F.
311	00357	R	737777	A	AXR -1 /INDEX REG. SET TO END OF GAP
312	00360	R	600363	R	JMP EOGAP

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313 00361 R 737777 A   AXR -1 /RESET X
314 00362 R 600345 R   JMP SKNDJ
315 00363 R 724000 A   EOGAP PXA
316 00364 R 040725 R   DAC AD1 /ADDR. OF END OF GAP
317 00365 R 200727 R   LAC AD3
318 00366 R 040726 R   DAC AD2
319 00367 R 200725 R   LAC AD1
320 00370 R 740031 A   TCA
321 00371 R 340726 R   TAD AD2
322 00372 R 040735 R   DAC SHIFT /MINUS SHIFT FOR BLOCK TO BE MOVED
323 00373 R 200742 R   LAC FLAG2
324 00374 R 741200 A   SNA
325 00375 R 600274 R   JMP LOOPA
326 00376 R 200735 R   EODF LAC SHIFT
327 00377 R 360722 R   TAD* ADFAD
328 00400 R 060722 R   DAC* ADFAD /UPDATES NO. OF WORDS IN DF
329                               /DF. COLLAPSE FINISHED
330                               LAC ADFAD
331 00402 R 723002 A   AAC 2
332 00403 R 703004 A   703004 /RESTART DISPLAY AT BEGINNING
333 00404 R 200721 R   LAC TFLAG1
334 00405 R 040720 R   DAC TFLAG
335 00406 R 600201 R   JMP TRYIT /TRY ADDING ITEM AGAIN
336 00407 R 460017 R   FULUP ISZ* PAR2 /FLAG=1 NOROOM, FLAG=2 ITEM PRESENT WITH SAME NAME
337 00410 R 220017 R   LAC* PAR2
338 00411 R 541114 R   SAD (1
339 00412 R 741000 A   SKP
340 00413 R 620163 R   JMP* DFAD /EXIT
341 00414 R 777777 A   LAW -1
342 00415 R 121074 E   JMS* WINDOW
343                               /
344                               /
345                               /
346                               /
347                               /MOVES BLOCK OF DISPLAY CODE STARTING AT AD1,LENGTH NW, TO START
348                               /AD2. UPDATES DJ AND CHAR INSTRUCTIONS.
349 00416 R 000000 A   MOVE 0
350 00417 R 200725 R   LAC AD1 /START OF OLD BLOCK
351 00420 R 723777 A   AAC -1
352 00421 R 061115 R   DAC* (10 /FOR SHIFT
353 00422 R 200737 R   LAC NW /NO. OF WORDS
354 00423 R 740031 A   TCA
355 00424 R 040734 R   DAC CNT1
356 00425 R 200725 R   LAC AD1
357 00426 R 740031 A   TCA
358 00427 R 340726 R   TAD AD2
359 00430 R 040736 R   DAC SHIFT1 /FOR JUMP ADDRESS MODIFICATION
360 00431 R 200726 R   LAC AD2 /START OF NEW BLOCK
361 00432 R 723777 A   AAC -1
362 00433 R 061116 R   DAC* (11
363 00434 R 140716 R   DZM FLOG
364 00435 R 200716 R   LOOP3 LAC FLOG

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365 00436 R 740020 A RAR
366 00437 R 220010 A LAC* 10
367 00440 R 040732 R DAC TEMPS
368 00441 R 740400 A SNL
369 00442 R 600445 R JMP .+3
370 00443 R 140716 R DZM FLOG
371 00444 R 600472 R JMP NEXT
372 00445 R 501117 R AND (777000
373 00446 R 541120 R SAD (235000
374 00447 R 741000 A SKP
375 00450 R 600453 R JMP .+3
376 00451 R 440716 R ISZ FLOG
377 00452 R 600472 R JMP NEXT
378 00453 R 501112 R AND (760000
379 00454 R 541121 R SAD (600000
380 00455 R 600463 R JMP WRITE /DJ FOUND
381 00456 R 541122 R SAD (600000
382 00457 R 600464 R JMP WRITE+1
383 00460 R 541123 R SAD (660000
384 00461 R 600464 R JMP WRITE+1
385 00462 R 600472 R JMP NEXT
386 00463 R 440716 R WRITE ISZ FLOG
387 00464 R 652000 A LMQ
388 00465 R 200732 R LAC TEMPS
389 00466 R 340736 R TAD SHIFT1
390 00467 R 501077 R AND (17777
391 00470 R 640002 A OMQ
392 00471 R 741000 A SKP
393 00472 R 200732 R NEXT LAC TEMPS /NO UPDATING
394 00473 R 060011 A DAC* 11 /STORE DATA - UPDATED IF REQUD.
395 00474 R 440734 R ISZ CNT1
396 00475 R 600435 R JMP LOOP3
397 00476 R 620416 R JMP* MOVE /EXIT
398 /
399 /
400 /
401 /
402 /SEARCHES DF. FOR ITEM WITH NAME IN ACC. (IF SEARCH
403 /REQUD.). EXITS TO INSTRN. FOLLOWING CALL IF ITEM ABSENT -
404 /TO FOLLOWING INSTRN., WITH ADDR. OF NAME IN ADDR AND ADDR. OF
405 /START OF NEXT ITEM IN X IF ITEM FOUND
406 GETIT 0
407 00500 R 040731 R DAC NAME /STORE ITEM NAME
408 00501 R 200722 R LAC ADFAD /START ADDR. OF DF
409 00502 R 360722 R TAD* ADFAD /NO. OF WORDS
410 00503 R 722000 A PAL /L CONTAINS ADDR. OF END OF DF.
411 00504 R 200731 R LAC NAME
412 00505 R 140741 R DZM FLAG /IF SEARCHING FOR ITEM
413 00506 R 741100 A SPA /NO SEARCH REQUD. I.E. DS. ITEM
414 00507 R 600515 R JMP LOOK
415 00510 R 040732 R DAC TEMPS /ABS PTER. TO WORD IN DS. HOLDING PTER
416 00511 R 100567 R JMS FINDIT

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417 00512 R 723777 A AAC -1
418 00513 R 721000 A PAX /ADDR. OF ITEM START IN X
419 00514 R 600561 R JMP RTNM
420 00515 R 200722 R LOOK LAC ADFAD /START ADDR. OF DF.
421 00516 R 723001 A AAC 1
422 00517 R 721000 A PAX /START ADDR. OF SEARCH
423 00520 R 725001 A LOOP1 AXS 1 /INCR. X, SKIP IF END OF DF.
424 00521 R 741000 A SKP
425 00522 R 620477 R JMP* GETIT /EXIT
426 00523 R 200741 R LAC FLAG
427 00524 R 741200 A SNA
428 00525 R 600533 R JMP .+6
429 00526 R 230724 R LAC* ZERO,X /SEARCHING FOR END
430 00527 R 501124 R AND (777776
431 00530 R 541107 R SAD (235176
432 00531 R 620477 R JMP* GETIT /START OF NEXT ITEM
433 00532 R 600546 R JMP NOSKP
434 00533 R 200720 R LAC TFLAG
435 00534 R 740031 A TCA
436 00535 R 370724 R TAD* ZERO,X
437 00536 R 541107 R SAD (235176
438 00537 R 741000 A SKP
439 00540 R 600546 R JMP NOSKP
440 00541 R 230723 R LAC* ONE,X /GET NAME
441 00542 R 540731 R SAD NAME /WRONG NAME
442 00543 R 600561 R JMP RTNM
443 00544 R 737001 A STNM AXR 1 /STEP OVER NAME
444 00545 R 600520 R JMP LOOP1
445 00546 R 501112 R NOSKP AND (760000
446 00547 R 341113 R TAD (-620000
447 00550 R 740200 A SZA /DJI FOUND
448 00551 R 600520 R JMP LOOP1
449 00552 R 200741 R LAC FLAG
450 00553 R 740200 A SZA
451 00554 R 620477 R JMP* GETIT /FOUND END OF ITEM
452 00555 R 230723 R LAC* ONE,X /GET DJI ADDR.
453 00556 R 723777 A AAC -1
454 00557 R 721000 A PAX /NEW START -1 IN X
455 00560 R 600520 R JMP LOOP1
456 00561 R 440477 R RTNM ISZ GETIT /SET UP VALID EXIT
457 00562 R 724000 A PXA
458 00563 R 723001 A AAC 1
459 00564 R 040730 R DAC ADDR /ADDR. OF NAME
460 00565 R 440741 R ISZ FLAG /SET TO SEARCH FOR END OF ITEM
461 00566 R 600544 R JMP STNM
462 /
463 /
464 /
465 /
466 /
467 00567 R 740040 A FINDIT XX
468 00570 R 200720 R LAC TFLAG

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469	00571	R	740200	A	SZA
470	00572	R	600612	R	JMP CONN
471	00573	R	220732	R	LAC* TEMPS
472	00574	R	742020	A	RTR
473	00575	R	501125	R	AND (177400
474	00576	R	041070	R	DAC STOR
475	00577	R	440732	R	ISZ TEMPS
476	00600	R	220732	R	LAC* TEMPS
477	00601	R	744000	A	CLL
478	00602	R	640512	A	LRS 12
479	00603	R	341070	R	TAD STOR
480	00604	R	041070	R	DAC STOR
481	00605	R	200732	R	LAC TEMPS
482	00606	R	723777	A	AAC -1
483	00607	R	040732	R	DAC TEMPS
484	00610	R	201070	R	LAC STOR
485	00611	R	620567	R	JMP* FINDIT
486	00612	R	220732	R	CONN LAC* TEMPS
487	00613	R	501126	R	AND (77777
488	00614	R	620567	R	JMP* FINDIT
489					/
490					/
491					/
492					/
493					/
494	00615	R	740040	A	INLINK XX
495	00616	R	040717	R	DAC DISFAD
496	00617	R	200720	R	LAC TFLAG
497	00620	R	740200	A	SZA
498	00621	R	600646	R	JMP INLNK1
499	00622	R	200717	R	LAC DISFAD
500	00623	R	742010	A	RTL
501	00624	R	501127	R	AND (776000
502	00625	R	652000	A	LMQ
503	00626	R	220732	R	LAC* TEMPS
504	00627	R	501130	R	AND (1777
505	00630	R	640002	A	OMQ
506	00631	R	060732	R	DAC* TEMPS
507	00632	R	440732	R	ISZ TEMPS
508	00633	R	200717	R	LAC DISFAD
509	00634	R	640712	A	ALS 12
510	00635	R	652000	A	LMQ
511	00636	R	220732	R	LAC* TEMPS
512	00637	R	501130	R	AND (1777
513	00640	R	640002	A	OMQ
514	00641	R	060732	R	DAC* TEMPS
515	00642	R	200732	R	LAC TEMPS
516	00643	R	723777	A	AAC -1
517	00644	R	040732	R	DAC TEMPS
518	00645	R	620615	R	JMP* INLINK
519	00646	R	220732	R	INLNK1 LAC* TEMPS
520	00647	R	501126	R	AND (77777

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521      00650 R 041067 R   DAC DISNO
522                                     / THIS BLOCK FINDS OTHER END OF CONNEXION AND MARKS WITH
523                                     /DISPLAY FILE ADDRESS
524      00651 R 200732 R   LAC TEMPS
525      00652 R 723776 A   AAC -2
526      00653 R 041070 R   DAC STOR#
527      00654 R 744000 A   CLL
528      00655 R 221070 R   LAC* STOR
529      00656 R 640511 A   LRS 11
530      00657 R 041070 R   DAC STOR /PTR TO OTHER COMP OVER 6
531      00660 R 744010 A   RCL
532      00661 R 341070 R   TAD STOR /*3
533      00662 R 744010 A   RCL
534      00663 R 360001 R   TAD* COMPAD /IST WORD OF OTHER COMP.
535      00664 R 041070 R   DAC STOR
536      00665 R 221070 R   LAC* STOR /PTR TO CONNEX. ARRAY
537      00666 R 360002 R   TAD* CONNAD
538      00667 R 723777 A   AAC -1
539      00670 R 723003 A   LOOPY8 AAC 3
540      00671 R 041070 R   DAC STOR
541      00672 R 221070 R   LAC* STOR
542      00673 R 501126 R   AND (77777 /UNPACK DISPLAY FILE ADDR
543      00674 R 541067 R   SAD DISNO#
544      00675 R 600700 R   JMP .+3
545      00676 R 201070 R   LAC STOR /NOT OTHER END
546      00677 R 600670 R   JMP LOOPY8
547      00700 R 221070 R   LAC* STOR
548      00701 R 501121 R   AND (600000
549      00702 R 340717 R   TAD DISFAD
550      00703 R 061070 R   DAC* STOR
551      00704 R 220732 R   LAC* TEMPS
552      00705 R 501121 R   AND (600000
553      00706 R 340717 R   TAD DISFAD
554      00707 R 060732 R   DAC* TEMPS
555      00710 R 620615 R   JMP* INLINK
556                                     /
557                                     /
558                                     /
559                                     /
560      00711 R 740040 A   UPDATE XX
561      00712 R 100567 R   JMS FINDIT
562      00713 R 340735 R   TAD SHIFT
563      00714 R 100615 R   JMS INLINK
564      00715 R 620711 R   JMP* UPDATE
565                                     /
566                                     /
567                                     /
568                                     /
569      00716 R 000000 A   FLOG 0
570      00717 R 000000 A   DISFAD 0
571      00720 R 000000 A   TFLAG 0
572      00721 R 000000 A   TFLAG1 0

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573 00722 R 000000 A ADFAD 0
574 00723 R 000001 A ONE 1
575 00724 R 000000 A ZERO 0
576 00725 R 000000 A AD1 0
577 00726 R 000000 A AD2 0
578 00727 R 000000 A AD3 0
579 00730 R 000000 A ADDR 0
580 00731 R 000000 A NAME 0
581 00732 R 000000 A TEMPS 0
582 00733 R 000000 A TEMP 0
583 00734 R 000000 A CNT1 0
584 00735 R 000000 A SHIFT 0
585 00736 R 000000 A SHIFT1 0
586 00737 R 000000 A NW 0
587 00740 R 000000 A NWDS 0
588 00741 R 000000 A FLAG 0
589 00742 R 000000 A FLAG2 0
590 00743 R 000000 A CFLAG 0
591 00744 R 000000 A TGAP 0
592 00745 R 000746 R .TITLE DFLPK
593 .
594 /FUNCTION SUBROUTINE DFLPK RETURNS WITH ABS. ADDR. OF DF. WORD
595 /CONTAINING POINTER TO DS.. MODE DETERMINES TYPE(S) OF ITEMS
596 /WHICH MAY BE SEEN - BIT 14, COPPER - 15, ROUTES - 16, CONNECTIONS
597 / - 17, COMPONENTS. SEEING ANY OTHER TYPE OF ITEM WILL CAUSE AN EXIT
598 /WITH ACC. SET NEGATIVE.
599 /DFADDR=DFLPK(MODE)
600 .GLOBL DFLPK,XPEN,YPEN
601 00746 R 000000 A DFLPK 0
602 00747 R 121075 E JMS* .DA
603 00750 R 600752 R JMP .+2
604 00751 R 000000 A MODE .DSA 0
605 00752 R REED .READ 10,3,BUF,1 /READ ON
606 00752 R 003010 A *G CAL+3*1000 10&777
607 00753 R 000010 A *G 10
608 00754 R 001060 R *G BUF
609 *G .DEC
610 00755 R 777777 A *G -1
611 .WAIT 10 /LP INT.
612 00756 R 000010 A *G CAL 10&777
613 00757 R 000012 A *G 12
614 00760 R 201062 R LAC BUF+2
615 00761 R 041071 R DAC XPEN#
616 00762 R 201063 R LAC BUF+3
617 00763 R 041072 R DAC YPEN#
618 00764 R 750001 A CLC
619 00765 R 341065 R TAD BUF+5 /NAME REGISTER
620 00766 R 740200 A SZA
621 00767 R 600772 R JMP .+3
622 00770 R 750001 A CLC
623 00771 R 620746 R JMP* DFLPK /SCREEN OUTLINE SEEN
624 00772 R 740100 A SMA
625 00773 R 600752 R JMP REED /LIGHT BUTTON SEEN

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618 00774 R 201064 R LEVEL1 LAC PC /BACKWARD SCAN
619 00775 R 723777 A AAC -1
620 00776 R 041064 R DAC PC
621 00777 R 221064 R LAC* PC
622 01000 R 501124 R AND (-2
623 01001 R 541107 R SAD (235176 /NOT A SKIP
624 01002 R 741000 A SKP
625 01003 R 600774 R JMP LEVEL1
626 01004 R 221064 R LAC* PC
627 01005 R 441064 R ISZ PC
628 01006 R 541110 R SAD (235177 /235177 SKIP
629 01007 R 601020 R JMP NOTCMP /235176 SKIP
630 01010 R 221064 R LAC* PC /NAMEWORD
631 01011 R 751101 A SPA:CLA:ICMA /A COMPONENT
632 01012 R 620746 R JMP* DFLPK /NOT A DS. ITEM. ACC=-1
633 01013 R 220751 R LAC* MODE
634 01014 R 740020 A RAR
635 01015 R 740400 A SNL /EXIT ON COMPONENT REQUIRED
636 01016 R 600752 R JMP REED
637 01017 R 601056 R JMP OUT
638 01020 R 221064 R NOTCMP LAC* PC /NAMEWORD
639 01021 R 740100 A SMA /COPPER
640 01022 R 601030 R JMP NOTCOP
641 01023 R 220751 R LAC* MODE
642 01024 R 501115 R AND (10
643 01025 R 741200 A SNA /EXIT ON COPPER REQUIRED
644 01026 R 600752 R JMP REED
645 01027 R 601056 R JMP OUT
646 01030 R 221064 R NOTCOP LAC* PC
647 01031 R 723777 A AAC -1
648 01032 R 040732 R DAC TEMPS
649 01033 R 220732 R LAC* TEMPS
650 01034 R 652000 A LMQ
651 01035 R 440732 R ISZ TEMPS
652 01036 R 220732 R LAC* TEMPS
653 01037 R 744010 A RCL
654 01040 R 742010 A RTL
655 01041 R 501105 R AND (3
656 01042 R 640614 A LLS 14 /POINTER TO ROUTES
657 01043 R 740200 A SZA /A CONNECTION
658 01044 R 601052 R JMP ROOT /A ROUTE
659 01045 R 220751 R LAC* MODE
660 01046 R 742020 A RTR
661 01047 R 740400 A SNL /EXIT ON CONNECTION REQUIRED
662 01050 R 600752 R JMP REED
663 01051 R 601056 R JMP OUT
664 01052 R 220751 R ROOT LAC* MODE
665 01053 R 501131 R AND (4
666 01054 R 741200 A SNA /EXIT ON ROUTE REQUIRED
667 01055 R 600752 R JMP REED
668 01056 R 201064 R OUT LAC PC
669 01057 R 620746 R JMP* DFLPK /EXIT

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```
670 01060 R      A   BUF .BLOCK 4 /FOR .READ
671 01064 R 000000 A   PC 0 /PROGAM COUNTER
672 01065 R 000000 A   0 /NAME REG.
673      000000 A   .END
      01073 R 001073 E *E
      01074 R 001074 E *E
      01075 R 001075 E *E
      01076 R 740000 A *L
      01077 R 017777 A *L
      01100 R 620001 A *L
      01101 R 000002 A *L
      01102 R 620000 A *L
      01103 R 200000 A *L
      01104 R 741000 A *L
      01105 R 000003 A *L
      01106 R 000012 A *L
      01107 R 235176 A *L
      01110 R 235177 A *L
      01111 R 542602 A *L
      01112 R 760000 A *L
      01113 R 160000 A *L
      01114 R 000001 A *L
      01115 R 000010 A *L
      01116 R 000011 A *L
      01117 R 777000 A *L
      01120 R 235000 A *L
      01121 R 600000 A *L
      01122 R 060000 A *L
      01123 R 660000 A *L
      01124 R 777776 A *L
      01125 R 177400 A *L
      01126 R 077777 A *L
      01127 R 776000 A *L
      01130 R 001777 A *L
      01131 R 000004 A *L
      SIZE=01132      NO ERROR LINES
```

ABS	00067	84	94	106*					
ADDR	00730	88	91	98	99	101	104	143	155
		159	213	218	242	459	579*		
ADFAD	00722	72	114	116	117	206	210	211	230
		233	234	236	252	256	327	328	330
		408	409	420	573*				
AD1	00725	148	228	288	316	319	350	356	576*
AD2	00726	157	225	318	321	358	360	577*	
AD3	00727	284	290	295	296	317	578*		
BUF	01060	604	606	608	611	670*			
CFLAG	00743	192	244	247	590*				
CNT1	00734	355	395	583*					
COLL	00255	209	244*						
COMPAD	00001	51*	534						
CONN	00612	470	486*						
CONNAD	00002	52*	537						
DFAD	00163	48	172	173	186*	190	243	340	
DFADDR	01073	48	71	113					
DFDEL	00031	48	76*	80	105	107	169	170	
DFINIT	00071	48	112*	124					
DFKEEP	00003	48	53*						
DFLPK	00746	592	599	600*	615	632	669		
DFREP	00106	48	133*	164	174	177			
DFSIZ	01066	70	203						
DISFAD	00717	495	499	508	549	553	570*		
DISNO	01067	521	543						
DJIF	00323	279	283*						
EODF	00376	300	326*						
EOGAP	00363	305	312	315*					
EROR	00160	139	175*						
FINDIT	00567	90	416	467*	485	488	561		
FLAG	00741	412	426	449	460	588*			
FLAG2	00742	249	282	298	310	323	589*		
FLOG	00716	363	364	370	376	386	569*		
FULUP	00407	199	246	336*					
GETARG	00004	55*	56	75	78	135	188		
GETIT	00477	83	138	196	406*	425	432	451	456
GOON	00320	276	280*						
IDNOP	00143	162*	167						
INLINK	00615	96	220	494*	518	555	563		
INLNK1	00646	498	519*						
LEVEL1	00774	618*	625						
LOK	00054	92	95*						
LOOK	00515	414	420*						
LOOPA	00274	260*	281	325					
LOOPY8	00670	539*	546						
LOOP1	00520	423*	444	448	455				
LOOP3	00435	364*	396						
MODE	00751	603*	633	641	659	664			
MOVE	00416	158	229	293	349*	397			
NAMD	00056	87	97*						
NAME	00731	85	407	411	441	580*			
NEXT	00472	371	377	385	393*				

NODS	00226	216	221*						
NOMU/	00342	287	298*						
NOROM	00151	154	168*						
NOSKP	00546	433	439	445*					
NOTCMP	01020	629	638*						
NOTCOP	01030	640	646*						
NOTSKP	00315	265	277*						
NW	00737	151	160	202	207	231	292	353	586*
NWDS	00740	145	152	587*					
ONE	00723	268	306	440	452	574*			
OUT	01056	637	645	663	668*				
PAR1	00016	65*	82	137	193	214	221		
PAR2	00017	66*	73	81	93	106	136	176	191
		198	336	337					
PAR3	00020	67*	146	149	200	226			
PC	01064	618	620	621	626	627	630	638	646
		668	671*						
REED	00752	604*	617	636	644	662	667		
ROOT	01052	658	664*						
RTNM	00561	419	442	456*					
SHIFT	00735	250	272	285	294	322	326	562	584*
SHIFT1	00736	359	389	585*					
SIZE	00000	50*	50	68					
SKNDJ	00345	301*	314						
STEP	00313	270	275*						
STNM	00544	443*	461						
STOR	01070	474	479	480	484	526	528	530	532
		535	536	540	541	545	547	550	
TEMP	00733	582*							
TEMPS	00732	89	119	123	217	235	239	271	367
		388	393	415	471	475	476	481	483
		486	503	506	507	511	514	515	517
		519	524	551	554	581*	648	649	651
		652							
TFLAG	00720	74	241	258	267	334	434	468	496
		571*							
TFLAG1	00721	259	333	572*					
TGAP	00744	591*							
TRYIT	00201	195	197	200*	335				
UPDATE	00711	274	560*	564					
WINDOW	01074	48	342						
WRITE	00463	380	382	384	386*				
XPEN	01071	599	607						
YPEN	01072	599	609						
ZERO	00724	166	260	301	429	436	575*		
.DA	01075	48	63	601					
.TITLE	00745	592*							